



NIK WEST

EDGEwise

Weather. Climate. What's the difference? There's a popular saying that climate is what we expect, but weather is what we get. "Climate is the statistics of weather," says UVic climatologist Andrew Weaver. "You can't talk about climate unless you understand weather. The physics is the same for both."

The hottest temperature recorded on the south Island over the last six years was 34.9°C at Lake Cowichan in June 2008. The coldest was -15.6°C in Duncan in December 2008. Find out more in the "Extremes" section at www.victoriaweather.ca.

The School-Based Weather Station Network operates on a shoestring budget and relies on grants and donations. Major funders are the BC Year of Science, CTV Vancouver Island and the Natural Sciences and Engineering Council's PromoScience program.

Weaver is the Canada Research Chair in Climate Modelling and Analysis and one of the world's leading authorities on climate change. He's the author of two popular books on climate: *Keeping our Cool: Canada in a Warming World* (2008) and *Generation Us: The Challenge of Global Warming* (2011).

UVic researchers were awarded more than \$100 million in outside research grants and contracts in 2010/11—more than triple the amount achieved 10 years ago.

The weather watchers

UVic climate researchers take their expertise into the community

Weaver at a school weather station.

Let's face it, many of us don't have fond memories of physics and mathematics from our school days. "Why do we need to know this?" we wondered. "How does this stuff make any difference to our lives?"

Now, thanks to the work of two University of Victoria scientists, schoolchildren in Greater Victoria and many parts of Vancouver Island and the Gulf Islands are getting an answer. They're learning that every day we see these two sciences in action—shaping our weather.

"Physics and mathematics are often perceived as difficult and irrelevant," says UVic climatologist Dr. Andrew Weaver, who runs the School-Based Weather Station Network with Ed Wiebe, a research associate in the university's climate modelling lab. "What better way to demonstrate relevance to kids than weather, something we see and feel every day?"

Weaver and Wiebe created the network in 2005 to raise the profile of meteorology in the school curriculum and to engage children and young adults in science.

What began as a scattering of weather stations on several school rooftops in Greater Victoria has grown to a network of 140 stations in places as far-flung as Tofino, Port Renfrew,

Port Alberni, Campbell River, Lasqueti Island, Nanaimo, Saturna Island and Chilliwack.

Each weather station is a small, solar-powered instrument package mounted on a school roof. Every 60 seconds, the instruments measure temperature, humidity, wind speed and direction, precipitation, solar and ultraviolet radiation, and atmospheric pressure.

Wireless technology sends the data to a receiver connected to a computer at the school. From there, the information flows via the internet to a central computer in Weaver's lab where it is displayed online at www.victoriaweather.ca.

Curriculum resources are provided for teachers and students in elementary and middle schools. Weaver and his team also make occasional in-class visits and offer a limited number of tours of UVic's climate modelling lab.

"The feedback we get from the kids is overwhelmingly positive," he says. "And it's tremendous fun for us to see them get so excited about the science of weather."

Several of Weaver's graduate students are now writing a handbook of all the demonstrations they've done for schoolchildren over the years. It will be available free online.

There are many other beneficiaries of the

network, which Weaver believes is the only one of its kind in the world that provides local weather conditions in such fine detail.

Vancouver Island weather can vary greatly in different regions or even in different parts of a city, he notes. "It's the interplay of the ocean and mountains. You might have a 10-degree difference between James Bay and Saanich, or five times more precipitation in Mill Bay than Oak Bay."

Data users include: fire stations and government forest managers for monitoring forest fire risk; CTV Vancouver Island in its daily weather forecast; Transport Canada to investigate a fatal plane crash; insurance companies to assess liability claims; municipalities to monitor local extreme weather events; and runners and cyclists to plan their routes. The list goes on.

"This is not traditional university research where we go in, do controlled experiments and publish," says Weaver. "It's about finding out what is of interest to the community and making it happen. We're helping the community make decisions that are relevant to them."



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